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BHCTP Monthly Discharge Monitoring Report

Month: June-16

Facility: Central Treatment Plant

Location: Bunker Hill Superfund Site

Contract Number: W912DW-13-C-0026-P00010

Total Flow For The Month From 006 Outfall:	51,993,200	gallons
Sludge pumping to CIA sludge pond:	1,249,800	gallons
Total Flow From Kellogg Tunnel:	53,149,810	gallons

Percent of Influent Successfully Treated: 100.0%

13 sample days * 6 parameters (Pb, Cd, Zn, Mn, TSS & pH) = 78 potential exceedances
78 - 0 exceedances = 78 78/78 = 100%

Results of Sampling Efforts:

All sampling has been performed in accordance with specifications and the Sampling and Analysis Plan. QC and QA samples have been taken as required. All sample analysis results may be found within this DMR.

Performance Evaluation (PE) sampling for the CTP continued, with five PE samples delivered to SVL for this reporting period. The PE samples were identified as CTPXX (random CTP sites). These samples consisted of preserved 500-ml trace metal samples to be analyzed for Cd, Pb and Zn. The PE acceptable quantitation range is listed on the 'QC' page of this DMR.

Trip blank and rinsate samples were also taken, with the results being reported on the 'PTM-004,RB,TB' page of this DMR.

Highlights of Plant Maintenance and/or Plant Optimization:

06-01-16 CTP operations pH set point was decreased from 8.4 to 8.3, as KT samples indicate decreasing metals levels.

06-01-16 Performed monthly fire extinguisher inspection. All CTP fire extinguishers are fully charged and in good working condition at this time.

06-01-16 Performed monthly pump and motor inspection. All CTP pumps and motors are in good condition at this time with the exception of the Rapid Mix gear box. Gear box vibration is increasing.

06-02-16 Performed lined storage pond pumping during KT low-flow period.

06-02-16 Operators removed lime injection pump #2 from service and placed pump #1 into service.
Operators removed and repaired a broken lime slurry discharge pipe located just above the #2 pump.
The pipe section was replaced with a stock pipe unit from inventory.

06-08-16 22:25 Operators responded to an auto-dialer call-out alarm. Call-out alarm was caused by an electrical storm in the area. The emergency generator was activated for approximately 15 minutes. All pumps and motors were reset, tested and inspected by the operator. All pumps and motors were found to be in good condition upon inspection. KT flow was automatically diverted to the Lined Pond for 20 minutes during the power outage. The operator diverted flow back to the CTP after resetting all pumps and motors.

06-09-16 Chief Operator, Process Engineer, Project Manager and COR attended the monthly CTP process review meeting. Process pH reduction from 8.4 to 8.3 was discussed. KT discharge pH was reviewed.
Process quality, plant operations and operator work schedules were reviewed. Contract flocculent purchase was discussed.
Lime usage for the remainder of the FCI contract period was reviewed.

06-09-16 Williams gas line representative requested that the Clarifier cathodic protection system be removed from service

11:00 to 13:00 for line testing. Williams will be performing further testing that will require system shutdown.

06-10-16 21:55 Auto-dialer alarm caused by KT flow increase contacted the on-call operator. The mine operator activated the mine pool pumps around 8 p.m. The on-call operator responded and performed the required manual control system adjustments. Operators had anticipated a call-out after the mine owner stated electrical issues were found within the mine.

06-12-16 09:00 The CTP experienced a 30-minute power outage. The emergency generator was automatically activated. The emergency generator operated the CTP under full power for 30 minutes with no issues. Avista-supplied power was restored at approximately 09:30. The on-site operator performed a complete site pump and motor inspection after the power outage. All pumps, motors and process components were found in good working condition.
This power outage also shut down the mine pool pump, reducing the KT discharge from 1500 to 700 gpm.

06-13-16 21:00 Auto-dialer alarm caused by KT flow increase contacted the on-call operator. The mine operator activated the mine pool pumps around 7 p.m. The on-call operator responded and performed the required manual control system adjustments. Operators had anticipated a call-out after the mine owner stated electrical issues were found within the mine.

06-14-16 Operators performed the annual lime slurry holding tank draining, cleaning and inspection. The lime slurry tank and interior pipelines were cleaned. Approximately 20 gallons of lime waste grit was removed from the slurry holding tank and disposed of at the sludge pond. The access hatch door was found to be deteriorated and in need of replacement. Also two 3" diameter areas on the internal wall of the tank were found to have deteriorated up to 1/4" into the wall. These areas will need repair during the next draining/cleaning event.
Confined space evaluation, lock-out & tag-out and a pre-entry safety meeting was performed prior to entering the tank.
A tank inspection quality control report was submitted with the June 14, 2016 daily report.

06-14-16 Installed no trespassing and prosecuting information signs around the CIA sludge pond and on the Lined Pond access gate.

06-15-16 McCunes Instrumentation on-site to perform annual flow meter and pH meter calibrations.

06-15-16 Williams gas company requested the cathodic protection system be removed from service for 24 hours.
System was shut down as requested and restarted on Thursday, June 16th.

06-16-16 Operators discovered the #1 Clarifier underflow pump check valve had failed. The check valve may be stuck in the open position, allowing air to enter the underflow manifold from the sludge line. The air prevented the pumping of sludge with the normally used #3 sludge pump. Operators isolated the #1 sludge pump check valve and removed the #1 underflow pump from service. The #1 underflow pump will remain locked/tagged out until repairs can be made.

06-17-16 BHCTP annual fire extinguisher inspection was performed. All CTP fire extinguishers were tested, refilled and placed back into service in good working condition. Monthly fire extinguisher inspections are performed by the CTP operators.

06-23-16 Submitted an access request letter to Bob Hopper, owner of the Bunker Hill Mine. The letter requests access for the July AMD line cleaning and video inspection event. The access letter also includes a request for decreased KT discharge to allow for pre- and post-cleaning video inspections. The AMD line cleaning and video event is scheduled for July 11-14.

06-23-16 18:00 Auto-dialer alarm caused by KT flow increase contacted the on-call operator. The mine operator activated the mine pool pumps around 4 p.m. The on-call operator responded and performed the required manual control system adjustments. Operators had anticipated a call-out after the mine owner stated electrical issues were found within the mine.

06-28-16 Operators performed the monthly full load emergency generator run test. The emergency generator operated all CTP components for one hour as programmed with no issues or errors to report.

06-28-16 Received contract turnover flocculent supply.

06-28-16 Oxarc representative on-site to inspect the lime slurry tank. Oxarc will provide a quote to perform the tank weld sonar inspection. The inspection will identify decay areas in the welds and tank walls.

06-29-16 CTP was placed into short-term shutdown to allow operators to inspect the #1 Clarifier underflow pump check valve.
An internal plate mounting bolt had deteriorated. The bolt was replaced with a pin. The valve was tested and the pump was placed back into service. The CTP was placed back into full treatment mode after two hours of short-term shutdown.

6/29/2016 Oxarc representative on-site to perform phase ray metal quality test on the lime slurry tank in preparation for development of a price quote. Phase ray machine identified the lime slurry hatch deteriorated areas during the first testing.
A known area of detirioration was used for the machine test. The machine identifed the remainig thickness of the metal to be 1/4".
Oxarc will develop and submit the quote to perform the tank inspection based on the tank examination testing performed.

06-30-16 Performed quarterly pump and motor preventative maintenance inspection with Cash Balancing Services.
No significant vibration readings were found during this PM inspection.

06-30-16 Performed monthly data totalizing and meter resets.

During this reporting period:

- The Kellogg Tunnel discharge flow decreased by 6% from June 2015, from 56.4 mg to 53.1 mg.

- The Kellogg Tunnel zinc concentration decreased by 22% from June 2015, from an average of 78 mg/L to 63 mg/L.

- The CTP operating pH set point was increased to 8.5 from 8.3 during extended KT low-flow periods.

- The flocculent dosage remained at approximately 2 ppm to reduce process turbidity.

- The CTP sludge recycle rate remained at 400 gpm.

- CTP operators received four off-shift auto dialer call-out alarms caused by after-hours mine pool pump activation and a short-term power outage.

- CTP operators performed 2 pumping events from the Lined Storage Pond.

- CTP operators verified Aeration Basin pH probe and grab sample values twice per day.

- CTP operators observed no Kellogg Tunnel mine or mill operations.

Lessons Learned

No significant lessons to report for last month.

MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
2016	6	1	2016	6	30

PARAMETER		Quantity or Loading			Quality or Concentration					
		MONTHLY AVERAGE	DAILY MAXIMUM	UNITS	MINIMUM	MONTHLY AVERAGE	DAILY MAXIMUM	UNITS	FREQUENCY OF ANALYSIS	SAMPLE TYPE
pH	Sample Measurement				7.09		7.28		Continuous	Meter
	Permit Required				6.0		10.0			
Flow Thru Treatment Plant	Sample Measurement	1.73	2.20	mgd						
	Permit Required		Daily							
Lead Total - Pb Effluent	Sample Measurement	0.05	0.06	lbs/day		0.004	0.004	mg/L	three samples/ week	Comp 24
	Permit Required	14.8	37.0			0.30	0.60	mg/L		
Zinc Total - Zn Effluent	Sample Measurement	3.79	5.68	lbs/day		0.28	0.34	mg/L	three samples/ week	Comp 24
	Permit Required	36.2	91.3			0.73	1.48	mg/L		
Cadmium - Cd Effluent	Sample Measurement	0.085	0.141	lbs/day		0.006	0.008	mg/L	three samples/ week	Comp 24
	Permit Required	2.40	6.10			0.050	0.100	mg/L		
Manganese - Mn Effluent	Sample Measurement	241.3	394	lbs/day		17.9	25.6	mg/L	three samples/ week	Comp 24
	No Permit Required					N/A	N/A	mg/L		
Total Suspended Solids - TSS	Sample Measurement	15.1	27	lbs/day		1.1	1.6	mg/L	three samples/ week	Comp 24
	Permit Required	985	1907			20	30	mg/L		

PREPARED BY: GARY FULTON

REVIEWED BY: Mark Reinsel, Ph.D., P.E.

NPDES DISCHARGE POINT 006
CENTRAL TREATMENT PLANT
MONTH: Jun-16

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH	FLOW	TSS		LOADING
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day		mgd	mg/L	lbs/day	kg/day
1	0.004	0.06	0.245	4.20	0.004	0.07	19.2	329	7.17	2.05	0.6	10.3	4.66
2										1.15			
3	0.004	0.05	0.328	4.19	0.006	0.08	16.0	204	7.09	1.53	0.8	10.2	4.6
4										1.79			
5										2.04			
6	0.004	0.06	0.341	5.68	0.008	0.14	14.1	235	7.19	2.00	1.2	20.0	9.07
7										2.07			
8	0.004	0.06	0.302	5.13	0.008	0.14	18.6	316	7.22	2.03	1.6	27.2	12.32
9										1.79			
10	0.004	0.03	0.284	2.33	0.005	0.04	20.8	171	7.22	0.99	1.6	13.2	5.97
11										1.36			
12										2.09			
13	0.004	0.03	0.264	2.31	0.006	0.05	12.6	110	7.16	1.05	0.8	7.00	3.17
14										1.71			
15	0.004	0.06	0.282	4.89	0.006	0.10	11.9	207	7.26	2.08	1.2	20.8	9.45
16										2.09			
17	0.004	0.06	0.128	2.10	0.003	0.05	13.1	215	7.28	1.97	1.6	26.3	11.9
18										2.01			
19										2.12			
20	0.004	0.06	0.236	4.01	0.007	0.11	23.2	394	7.18	2.04	1.0	17.0	7.71
21										2.02			
22	0.004	0.03	0.266	2.55	0.007	0.07	25.6	245	7.22	1.15	1.0	9.59	4.35
23										1.34			
24	0.004	0.04	0.338	3.98	0.006	0.07	15.0	176	7.16	1.41	0.6	7.06	3.20
25										2.20			
26										2.02			
27	0.004	0.06	0.312	5.10	0.008	0.13	18.9	309	7.21	1.96	1.0	16.4	7.42
28										2.01			
29	0.004	0.03	0.287	2.79	0.005	0.05	23.1	224	7.21	1.16	1.2	11.7	5.29
30										0.76			
Total	0.047	0.65	3.61	49.3	0.08	1.10	232.1	3137	93.6	52.0	14.2	196.6	89.2
Sample Events	13	13	13	13	13	13	13	13	13	30	13	13	13
Daily Average	0.004	0.05	0.28	3.79	0.006	0.08	17.9	241	7.20	1.73	1.09	15.12	6.86
Lab Detection Limit	**0.003**		**0.004**		**0.001**		**0.004**		**0.01**		**0.800**		

MIN	0.0036	0.03	0.13	2.10	0.0028	0.04	11.90	110	7.09	0.76	0.60	7.00	3.17
MAX	0.0039	0.06	0.34	5.68	0.0084	0.14	25.60	394	7.28	2.20	1.60	27.16	12.32

KELLOGG TUNNEL DISCHARGE
CENTRAL TREATMENT PLANT
MONTH: Jun-16
Data from SVL

DAY	LEAD (Pb)		ZINC (Zn)		CADMIUM (Cd)		MANGANESE (Mn)		pH	006 FLOW	TSS		
	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day	mg/L	lbs/day		mgd	mg/L	lbs/day	kg/day
1										2.05			
2	0.541	5.19	139	1,333	0.303	2.91	38	367	2.95	1.15	17	163	74
3										1.53			
4										1.79			
5										2.04			
6	0.475	7.91	72	1,204	0.140	2.33	79	1,309	3.11	2.00	103	1,716	778
7										2.07			
8										2.03			
9	0.520	7.76	139	2,075	0.282	4.21	38	566	2.85	1.79	19	284	129
10										0.99			
11										1.36			
12										2.09			
13	0.478	4.18	128	1,119	0.257	2.25	36	312	2.88	1.05	19	166	75
14										1.71			
15										2.08			
16	0.473	8.25	101	1,762	0.132	2.30	80	1,390	3.06	2.09	109	1,901	862
17										1.97			
18										2.01			
19										2.12			
20	0.460	7.82	66	1,120	0.120	2.04	77	1,300	3.13	2.04	101	1,717	779
21										2.02			
22										1.15			
23	0.492	5.49	144	1,608	0.257	2.87	36	406	2.86	1.34	23	257	116
24										1.41			
25										2.20			
26										2.02			
27	0.447	7.31	55	898	0.112	1.83	78	1,268	3.19	1.96	102	1,668	757
28										2.01			
29										1.16			
30	0.488	3.09	125	793	0.246	1.56	36	226	2.89	0.76	25	159	72

PTM Effluent at Lined Storage Pond **Month: Jun-16**
CENTRAL TREATMENT PLANT

DATE	LEAD mg/L	ZINC mg/L	CADMIUM mg/L	pH s.u.	TSS mg/L
06/02/16	0.004	11.9	1.29	6.86	0.2
06/16/16	0.006	11.9	1.31	6.82	1.0
06/30/16	0.006	11.6	1.36	6.87	0.2

RINSATE AND TRIP BLANKS **Month: Jun-16**
CENTRAL TREATMENT PLANT

Rinsate and Trip Blank samples will be taken approximately every 20 QC events, or one each per month.

LOCATION DATE Rinsate & Trip Blank	SAMPLE	LEAD mg/L	ZINC mg/L	CADMIUM mg/L
Kellogg Tunnel Discharge	RB-06-23-16	<0.01	<0.004	<0.002
Trip Blank (D.I.water)	TB-06-23-16	<0.01	<0.004	<0.002

Bunker Hill Central Treatment Plant

Daily log June 2016

				AERATION BASIN					CLARIFIER						DISCHARGE 006						RECYCLE SG		LIME SLURRY			SLUDGE PUMP		POND PUMP		SLUDGE GUN TEST		LINED POND
		INFLUENT KT			a.m.		p.m.		a.m.		p.m.				a.m.		p.m.								Injection Valve							ESTIMATED
DATE	Operators	GPM	pH	SET	pH1	grab	pH1	grab	pH2	grab	pH2	grab	TURB	TEMP	pH3	grab	pH3	grab	TURB	FLOW	SG	GPM	SG	%solid	Closed/Open	pump #	min	ON	OFF	10' Out	20' Out	Elevation (mg)
6/1	GF,SB.GC			8.3	8.3	8.3	8.7	8.7	8.0	8.0	7.7	8.0	0.75	56	7.4	7.3	7.4	7.2	0.53	2.05	1.047	400	1.069	10.7	200/25	3	90			8"	5"	2270.0 (1.5mg)
6/2	GF,SB.GC	720	2.80	**8.5**	8.5	8.6	8.5	8.5	7.7	8.0	8.0	8.0	0.60	61	7.3	7.1	7.3	7.3	0.51	1.15	1.028	400	1.068	10.5	188/15	3	45	6:00	13:30			2270.0 (1.5mg)
6/3	GF,GC			**8.5**	8.5	8.5	8.6	8.5	8.3	7.9	8.2	7.9	0.60	61	7.4	7.3	7.2	7.2	0.60	1.53	1.034	400	1.064	10.0	209/15	3	40					2269.0 (1.0mg)
6/4	GC			8.3	8.3	8.3	8.3	8.3	8.3	8.0	8.1	8.0	0.45	58	7.4	7.4	7.4	7.4	0.49	1.79	1.046	400	1.066	10.2	209/25	3	90					2269.0
6/5	SB			8.3	8.3	8.3	8.3	8.3	8.1	8.0	8.2	7.9	0.52	61	7.4	7.3	7.6	7.4	0.45	2.04	1.044	400	1.066	10.2	202/25	3	90					2269.0
6/6	GF,SB	1520	2.97	8.3	8.3	8.3	8.3	8.3	7.9	7.9	8.1	7.8	0.60	62	7.3	7.2	7.5	7.2	0.48	2.00	1.042	400	1.066	10.2	193/25	3	75					2269.0
6/7	GF,SB,GC			8.3	8.3	8.3	8.3	8.3	7.8	7.9	7.9	8.0	0.64	63	7.1	7.3	7.2	7.2	0.51	2.07	1.046	400	1.065	10.1	194/25	3	85					2269.0
6/8	GF,SB,GC			8.3	8.3	8.3	8.3	8.3	7.7	7.8	8.0	7.9	0.70	64	7.1	7.2	7.3	7.2	0.61	2.03	1.044	400	1.063	9.8	199/25	3	93					2269.0
6/9	GF,SB,GC	700	2.85	**8.5**	8.4	8.4	8.5	8.5	7.8	7.9	7.9	7.9	0.55	62	7.2	7.3	7.2	7.2	0.46	1.79	1.034	400	1.063	9.8	375/25	3	0					2269.0
6/10	GF,GC			**8.5**	8.5	8.4	8.6	8.5	7.8	7.9	7.8	7.9	0.60	60	7.2	7.2	7.3	7.3	0.55	0.99	1.043	400	1.066	10.2	214/15	3	105					2269.0
6/11	GC			8.3	8.4	8.4	8.4	8.3	8.1	8.0	8.0	8.0	0.52	60	7.3	7.4	7.5	7.5	0.58	1.36	1.037	400	1.066	10.2	211/25	3	60					2269.0
6/12	SB			8.3	8.3	8.4	8.6	8.6	8.3	8.1	8.0	7.9	0.51	55	7.6	7.3	7.3	7.3	0.42	2.09	1.043	400	1.065	10.1	223/25	3	90					2269.0
6/13	GF,SB	708	2.85	**8.5**	8.3	8.3	8.5	8.5	8.0	7.9	7.9	7.8	0.65	54	7.3	7.2	7.3	7.2	0.50	1.05	1.027	400	1.067	10.4	225/15	3	0					2269.0
6/14	GF,SB,GC			8.3	8.3	8.3	9.0	9.1	8.0	8.0	9.4	8.9	0.60	56	7.2	7.2	7.9	7.7	0.50	1.71	1.044	400	1.067	10.4	212/25	3	125					2269.0
6/15	GF,GC			8.3	8.3	8.3	8.3	8.4	9.2	8.7	8.9	8.3	3.33	53	8.5	8.5	8.4	8.4	2.89	2.08	1.034	400	1.068	10.5	210/25	3	0					2269.0
6/16	GF,GC	1510	3.00	8.3	8.3	8.3	8.3	8.3	8.4	8.2	8.4	8.1	2.25	55	8.0	7.6	7.9	7.5	2.20	2.09	1.047	400	1.067	10.4	220/25	3	125					2269.0
6/17	GF,GC			8.3	8.4	8.4	8.3	8.3	8.3	8.0	8.2	8.0	2.02	54	7.9	7.6	7.7	7.5	1.99	1.97	1.036	400	1.069	10.7	232/25	3	90					2269.0
6/18	GC			8.3	8.3	8.4	8.3	8.4	8.2	8.0	8.1	7.8	1.74	54	7.6	7.6	7.6	7.5	1.86	2.01	1.039	400	1.068	10.5	226/25	3	90					2269.0
6/19	SB			8.3	8.3	8.4	8.3	8.3	8.2	8.0	8.1	8.0	1.20	53	7.7	7.5	7.6	7.3	1.16	2.12	1.040	400	1.068	10.5	235/25	3	90					2269.0
6/20	GF,SB	1500	3.00	8.3	8.4	8.4	8.3	8.3	8.3	8.1	8.0	7.9	0.90	56	7.2	7.2	7.5	7.3	0.85	2.04	1.042	400	1.068	10.5	235/25	3	90					2269.0
6/21	GF,SB			8.3	8.3	8.4	8.7	8.7	8.0	8.0	8.1	8.0	0.89	59	7.3	7.2	7.6	7.3	0.77	2.02	1.039	400	1.067	10.4	217/25	3	60					2269.5 (1.25mg)
6/22	GF,SB			**8.5**	8.5	8.4	8.5	8.5	8.1	8.1	8.1	8.0	0.80	55	7.4	7.3	7.4	7.3	0.60	1.15	1.034	400	1.066	10.2	233/15	3	0	5:50	11:00			2269.5
6/23	GF,SB	695	2.85	**8.5**	8.5	8.6	8.5	8.5	8.0	7.9	8.1	7.9	0.71	60	7.3	7.2	7.3	7.3	0.66	1.34	1.035	400	1.066	10.2	230/15	3	60					2268.5 (0.75mg)
6/24	GF			8.3	8.4	8.4	8.3	8.3	8.0	7.9	8.0	7.9	0.65	61	7.3	7.2	7.2	7.2	0.60	1.41	1.047	400	1.068	10.5	230/25	3	120					2268.5
6/25	SB			8.3	8.3	8.3	8.3	8.3	7.9	7.9	7.8	7.9	0.59	59	7.6	7.3	7.4	7.2	0.45	2.20	1.039	400	1.067	10.4	223/25	3	70					2268.5
6/26	SB			8.3	8.3	8.4	8.3	8.3	7.8	7.9	7.7	7.9	0.52	60	7.6	7.3	7.4	7.3	0.45	2.02	1.042	400	1.066	10.2	227/25	3	90					2268.5
6/27	GF,SB	1480	3.02	8.3	8.3	8.4	8.2	8.2	7.7	7.9	7.7	8.0	0.55	58	7.5	7.3	7.4	7.3	0.46	1.96	1.041	400	1.066	10.2	225/25	3	90					2268.5
6/28	GF,SB,GC			8.3	8.3	8.4	8.5	8.5	7.3	7.9	7.8	8.0	0.64	61	7.2	7.4	7.3	7.3	0.63	2.01	1.042	400	1.068	10.5	232/25	3	60					2268.5
6/29	GF,SB,GC			**8.5**	8.5	8.4	8.5	8.5	7.4	7.9	7.4	7.9	0.60	60	7.3	7.2	7.3	7.2	0.49	1.16	1.034	400	1.067	10.4	246/15	3	30					2268.5
6/30	GF,SB,GC	660	3.30	**8.5**	8.5	8.5	8.3	8.3	6.6	7.9	7.8	7.9	0.80	61	7.1	7.2	7.2	7.2	0.50	0.76	1.030	400	1.068	10.5	248/15	3	60					2268.5 (0.75mg)
Averages:				8.36	8.37	8.38	8.42	8.42	7.98	7.98	8.04	7.97	**0.88**		7.41	7.34	7.44	7.34	**0.79**	52.0	**1.039**						**70**					
Notes:																											2113					

	06-01-16 Reduced the pH set point from 8.4 to 8.3, as KT zinc levels have decreased and the KT pH levels have increased.	1,267,800	Gallons	
	06-01-16 11:00 KT flow decreased from 1500 gpm to approximately 750 gpm. Mine owner shut off the mine pool pump.			
	06-02-16 06:00-13:30 Diverted KT low flow of approximately 700 gpm to the Lined Pond. Activated #3 Lined Pond pump to reduce water volume stored in the pond.			
	06-02-16 07:00 Replaced the Aeration Basin pH probe, as it indicated short-term failure during the night.			
	06-02-16 09:30 Removed #2 lime injection pump from service. Operators replaced a failed lime slurry pipe. Placed #2 lime injection pump back into service at 11:45.			
	06-03-16 11:00 KT flow increased from 680 gpm to 1520 gpm.			
	06-08-16 23:00 KT flow decreased from 1500 gpm to approximately 750 gpm. Power outage shut off the mine pool pump.			
	06-10-16 22:20 KT flow increased from 700 gpm to 1500 gpm. Auto-dialer call-out for low lime feed closed time. Operator manual adjustments required.			
	06-12-16 11:00 KT flow decreased to 700 from 1500 gpm. Flow decrease was caused by an Avista power outage.			
	06-13-16 22:00 KT flow increased from 700 gpm to 1500 gpm. Auto-dialer call-out for low lime feed closed time. Operator manual adjustments required.			
	06-14-16 Process pH was temporarily increased to 10.8 during draining of the lime slurry holding tank in preparation for annual cleaning and inspection.			
	06-15-16 12:00 Operators replaced the failed Clarifier pH probe. Two additional pH probes will be ordered and placed into inventory stock.			
	06-16-16 #1 Clarifier underflow pump check valve failed in the open position, causing sludge discharge pumping issues. #1 sludge pump check valve was isolated and locked/tagged out.			
	Operators will remove and inspect the #1 underflow check valve and submit repair costs to the COR as schedules allow.			
	06-21-16 12:30 KT flow decreased from 1500 gpm to approximately 700 gpm. Mine pool pump was shut off by the mine owner.			
	06-22-16 05:50-10:50 Diverted KT low flow of approximately 700 gpm to the Lined Pond. Activated #3 Lined Pond pump to reduce water volume stored in the pond.			
	06-28-16 06:00 Recalibrated Clarifier pH probe.			
	06-28-16 12:00 KT flow decreased from 1500 gpm to approximately 700 gpm. Mine pool pump was shut off by the mine owner.			
	06-29-16 07:15 - 09:15 KT low flow was diverted to the lined storage pond to allow operators to perform repairs to the #1 Clarifier underflow pump backflow prevention valve.			

CENTRAL TREATMENT PLANT **MISCELLANEOUS FLOWS**

Month : **Jun-16**

Date	**KT Flow Meter Reading**
5/31/2016	0
6/30/2016	53,149,810
Total	53,149,810

Date	**006 Flow Meter Reading**
5/31/2016	0
6/30/2016	51,993,200
Total	51,993,200

Sweeny Pump Station Reading

Date	#1 Pump	620 gpm	#2 Pump	500 gpm
5/31/2016	170.0	Hours	785.0	Hours
6/30/2016	170.0	Hours	785.0	Hours
Total Hours	0.0	Hours	0.0	Hours
Total Flow for 004/Sweeny For The Month =			0	Gallons

PTM Discharge Flow

Date	Flow (gpm)
06/02/16	11.0
06/16/16	8.5
06/30/16	6.5

Date	**Lined Storage Pond Water Level**			
5/31/2016	1,000,000	gal	Elev. =	2269.0
6/30/2016	1,500,000	gal	Elev. =	2270.0

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KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2000-2009

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Jan.	61,000,000	61,677,510	54,606,100	53,066,890	52,223,080	53,150,000	56,050,900	56,281,000	53,465,820	50,936,960
Feb.	57,600,000	45,584,000	52,840,000	46,493,470	48,306,920	49,860,000	51,188,000	50,511,300	49,282,209	48,146,111
March	60,730,000	57,740,360	50,452,060	60,162,290	59,852,720	58,073,000	56,332,830	65,443,650	54,578,130	61,712,540
April	68,680,000	54,846,000	65,583,230	63,335,350	50,715,310	53,775,350	72,039,280	66,636,500	61,690,530	63,055,350
May	**97,719,900**	57,501,901	76,082,410	63,335,350	53,245,000	54,181,650	72,027,000	63,203,308	86,680,760	70,233,580
June	69,800,000	55,835,590	67,299,960	59,532,434	50,451,170	51,750,000	68,385,600	57,981,410	82,622,590	64,623,180
July	63,698,850	53,652,330	64,820,120	66,252,746	56,538,980	55,255,000	64,054,000	58,282,900	66,324,500	61,535,000
Aug.	66,707,120	45,289,000	58,212,940	62,074,750	52,002,140	49,970,000	64,621,000	55,335,900	65,168,620	56,446,670
Sept.	55,797,530	50,276,020	60,140,460	43,789,000	49,208,020	49,987,000	54,515,270	50,471,870	61,074,020	57,006,430
Oct.	60,424,720	50,660,840	54,485,871	52,869,290	59,601,690	52,807,000	57,610,030	50,086,330	58,666,300	55,830,000
Nov.	53,408,660	50,660,840	51,072,259	47,600,000	51,948,000	50,722,600	55,191,700	50,779,040	52,041,780	54,956,800
Dec.	56,414,870	53,464,780	56,034,000	56,413,080	56,770,000	54,904,400	60,486,900	53,716,210	55,727,260	54,542,700
Totals	771,981,650	637,189,171	711,629,410	674,924,650	640,863,030	634,436,000	732,502,510	678,729,418	747,322,519	699,025,321

KELLOGG TUNNEL ANNUAL DISCHARGE FLOWS 2010-2019

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Jan.	55,503,180	61,797,170	58,434,610	**61,855,400**	57,478,450	58,440,540	52,196,730			
Feb.	50,819,910	54,556,227	57,763,170	59,383,290	54,607,950	**59,767,470**	53,694,400			
March	54,691,420	61,373,630	**67,236,650**	66,264,780	65,396,350	64,468,230	63,967,920			
April	56,255,340	65,687,340	**81,233,630**	69,619,100	65,618,770	63,056,840	63,323,620			
May	58,825,640	84,365,390	**86,826,340**	71,496,380	80,598,590	61,898,200	58,147,240			
June	56,770,200	79,985,540	**83,440,990**	64,663,900	65,623,330	56,368,540	53,149,810			
July	56,727,510	**79,346,330**	74,315,690	62,844,790	63,425,030	55,655,000				
Aug.	56,239,370	**70,377,570**	68,986,900	58,459,380	61,486,270	55,316,100				
Sept.	54,109,980	60,404,280	**62,270,300**	58,097,500	56,279,590	53,890,000				
Oct.	55,480,200	**62,403,480**	59,991,850	58,325,780	60,659,850	52,082,800				
Nov.	54,856,880	**58,430,700**	57,184,220	56,215,000	55,065,100	49,812,540				
Dec.	54,607,330	58,617,700	**61,750,390**	56,932,530	59,770,540	51,521,900				
Totals	664,886,960	797,345,357	**819,434,740**	**744,157,830**	**746,009,820**	**682,278,160**	**344,479,720**	**0**	**0**	**0**

Yellow indicates record monthly flow as well as record annual flow

KELLOGG TUNNEL ZINC DATA

			Concentration (mg/L)								
Month	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Jan.		86	81	79	63	70	61	72	57	68	41	46
Feb.		86	91	96	55	72	57	95	58	68	41	68
March		94	116	86	65	68	53	86	58	69	58	81
April		98	121	140	85	80	50	137	176	86	107	92
May		105	231	179	318	136	57	377	215	150	177	87
June		107	182	118	271	143	68	347	164	106	131	78
July		90	144	111	198	117	75	181	136	87	87	75
Aug.		87	112	92	132	94	79	130	110	86	76	66
Sept.		84	107	80	107	76	81	132	107	75	66	63
Oct.	59	81	100	88	99	75	70	86	70	67	63	54
Nov.	66	79	88	88	104	63	57	95	71	70	55	44
Dec.	67	62	78	65	76	59	61	88	69	54	49	55
average	**64**	**88**	**121**	**102**	**131**	**88**	**64**	**152**	**108**	**82**	**79**	**67**
lime usage (tons/day)		**2.59**	**3.23**	**2.76**	**4.78**	**3.24**	**2.16**	**4.31**	**3.93**	**2.46**	**2.70**	**1.99**
Zinc Conc. Increase/Decrease			**37%**	**-16%**	**29%**	**-33%**	**-27%**	**138%**	**-29%**	**-24%**	**-4%**	**-15%**
Lime Usage Increase/Decrease			**25%**	**-15%**	**73%**	**-32%**	**-33%**	**100%**	**-9%**	**-37%**	**10%**	**-26%**

2016
50
52
63
115
138

		Bunker Hill Superfund Site					
		Kellogg, Idaho					
		Central Treatment Plant Review					
		Month:	**Jun-16**				
SAMPLE	**DATE**	**PARAMETER**	**VALUE**	**QC/dup**	**UNITS**	**PRECISION**	**MATRIX SPIKE DATA**
LOCATION			**RESULTS**			**% RPD**	**% RECOVERY**
006/CTP Outfall	06/01/16	Cadmium	0.004	0.004	mg/L	7.4%	97%
		Lead	0.004	0.004	mg/L	0.0%	91%
Lab Duplicate		Manganese	19.2	19.5	mg/L	-1.6%	96%
		Zinc	0.245	0.246	mg/L	-0.4%	92%
		pH	7.17	7.07	s.u.	1.4%	
		TSS	0.6	0.6	mg/L	0.0%	
Performance	06/02/16	Cadmium	0.053	0.050	mg/L	6.4%	
Evaluation		Lead	0.332	0.300	mg/L	10.1%	
Sample		Zinc	0.875	0.730	mg/L	18.1%	
(CTPXX-06-02-16)					mg/L		
PTM Discharge	06/02/16	Cadmium	1.29	1.28	mg/L	0.8%	
		Lead	0.004	0.004	mg/L	-2.7%	
QC Sample		Zinc	11.9	11.9	mg/L	0.0%	
		pH	6.86	6.90	s.u.	-0.6%	
		TSS	0.2	0.6	mg/L	-100.0%	
PTM Discharge	06/02/16	Cadmium	1.29	1.26	mg/L	2.4%	98%
		Lead	0.004	0.005	mg/L	-40.0%	98%
Lab Duplicate		Manganese	0.708	0.675	mg/L	4.8%	98%
		Zinc	11.9	11.7	mg/L	1.7%	82%
006/CTP Outfall	06/03/16	Cadmium	0.006	0.006	mg/L	-3.2%	102%
		Lead	0.004	0.004	mg/L	0.0%	95%
Lab Duplicate		Manganese	16.0	16.1	mg/L	-0.6%	91%
		Zinc	0.328	0.329	mg/L	-0.3%	96%
		TSS	0.8	0.8	s.u.	0.0%	
		pH	7.1	7.1	mg/L	0.0%	
Kellogg Tunnel	06/06/16	Cadmium	0.140	0.139	mg/L	0.7%	101%
		Lead	0.475	0.474	mg/L	0.2%	94%
Lab Duplicate		Manganese	78.6	77.6	mg/L	1.3%	
		Zinc	72.3	72.2	mg/L	0.1%	
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	06/06/16	Cadmium	0.008	0.008	mg/L	1.2%	99%
		Lead	0.004	0.004	mg/L	0.0%	93%
Lab Duplicate		Manganese	14.1	14.2	mg/L	-0.7%	
		Zinc	0.341	0.336	mg/L	1.5%	93%
		pH	7.19	7.14	s.u.	0.7%	
		TSS	1.2	1.2	mg/L	0.0%	
006/CTP Outfall	06/08/16	Cadmium	0.008	0.008	mg/L	2.4%	99%
		Lead	0.004	0.004	mg/L	0.0%	95%
Lab Duplicate		Manganese	18.6	18.7	mg/L	-0.5%	
		Zinc	0.302	0.304	mg/L	-0.7%	98%
		pH	7.22	7.21	s.u.	0.1%	
		TSS	1.6	1.6	mg/L	0.0%	
Performance	06/09/16	Cadmium	0.051	0.050	mg/L	1.8%	
Evaluation		Lead	0.312	0.300	mg/L	3.9%	

SAMPLE LOCATION	DATE	PARAMETER	VALUE RESULTS	QC/dup	UNITS	PRECISION % RPD	MATRIX SPIKE DATA % RECOVERY
Sample		Zinc	0.853	0.730	mg/L	15.5%	
(CTPXX-06-09-16)					mg/L		
CTPXX-06-09-16	06/09/16	Cadmium	0.051	0.050	mg/L	1.2%	92%
		Lead	0.312	0.307	mg/L	1.6%	90%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%	96%
		Zinc	0.853	0.842	mg/L	1.3%	89%
006/CTP Outfall	06/10/16	Cadmium	0.005	0.005	mg/L	5.7%	
		Lead	0.004	0.004	mg/L	0.0%	
QC Sample		Manganese	20.8	19.8	mg/L	4.9%	
		Zinc	0.284	0.279	mg/L	1.8%	
		pH	7.22	7.24	s.u.	-0.3%	
		TSS	1.6	1.6	mg/L	0.0%	
006/CTP Outfall	06/10/16	Cadmium	0.005	0.005	mg/L	9.7%	101%
		Lead	0.004	0.004	mg/L	0.0%	93%
Lab Duplicate		Manganese	20.8	20.6	mg/L	1.0%	116%
		Zinc	0.284	0.270	mg/L	5.1%	92%
		pH	7.22	7.17	s.u.	0.7%	
		TSS	1.6	1.6	mg/L	0.0%	
Kellogg Tunnel	06/13/16	Cadmium	0.257	0.265	mg/L	-3.1%	96%
		Lead	0.478	0.496	mg/L	-3.7%	94%
Lab Duplicate		Manganese	35.7	35.7	mg/L	0.0%	
		Zinc	128	132	mg/L	-3.1%	
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	06/13/16	Cadmium	0.006	0.006	mg/L	1.7%	97%
		Lead	0.004	0.004	mg/L	8.0%	92%
Lab Duplicate		Manganese	12.6	12.5	mg/L	0.8%	105%
		Zinc	0.264	0.258	mg/L	2.3%	88%
		pH	7.16	7.14	s.u.	0.3%	
		TSS	0.8	0.8	mg/L	0.0%	
006/CTP Outfall	06/15/16	Cadmium	0.006	0.006	mg/L	0.0%	100%
		Lead	0.004	0.004	mg/L	0.0%	97%
Lab Duplicate		Manganese	11.9	11.7	mg/L	1.7%	
		Zinc	0.282	0.273	mg/L	3.2%	93%
		pH	7.26	7.24	s.u.	0.3%	
		TSS	1.2	0.6	mg/L	66.7%	
Performance	06/16/16	Cadmium	0.052	0.050	mg/L	4.3%	
Evaluation		Lead	0.321	0.300	mg/L	6.8%	
Sample		Zinc	0.904	0.730	mg/L	21.3%	
(CTPXX-06-16-16)					mg/L		
PTM Discharge	06/16/16	Cadmium	1.32	1.30	mg/L	1.5%	96%
		Lead	0.007	0.006	mg/L	10.9%	98%
Lab Duplicate		Manganese	0.733	0.730	mg/L	0.4%	96%
		Zinc	11.7	11.7	mg/L	0.0%	
		pH	7.28	7.23	s.u.	0.7%	
		TSS	1.6	1.6	mg/L	0.0%	
006/CTP Outfall	06/17/16	Cadmium	0.003	0.003	mg/L	0.0%	103%
		Lead	0.004	0.004	mg/L	0.0%	96%
Lab Duplicate		Manganese	13.1	13.4	mg/L	-2.3%	81%
		Zinc	0.128	0.127	mg/L	0.8%	97%

SAMPLE LOCATION	DATE	PARAMETER	VALUE RESULTS	QC/dup	UNITS	PRECISION % RPD	MATRIX SPIKE DATA % RECOVERY
		pH	7.28	7.23	s.u.	0.7%	
		TSS	1.6	1.6	mg/L	0.0%	
006/CTP Outfall	06/20/16	Cadmium	0.007	0.007	mg/L	0.0%	98%
		Lead	0.004	0.004	mg/L	0.0%	93%
Lab Duplicate		Manganese	23.2	23.3	mg/L	-0.4%	95%
		Zinc	0.236	0.238	mg/L	-0.8%	89%
		pH	7.18	7.14	s.u.	0.6%	
		TSS	1.0	1.2	mg/L	-18.2%	
Kellogg Tunnel	06/20/16	Cadmium	0.120	0.120	mg/L	0.0%	98%
		Lead	0.460	0.461	mg/L	-0.2%	93%
Lab Duplicate		Manganese	76.5	77.4	mg/L	-1.2%	
		Zinc	65.9	67.7	mg/L	-2.7%	
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	06/22/16	Cadmium	0.007	0.007	mg/L	5.9%	99%
		Lead	0.004	0.004	mg/L	0.0%	95%
Lab Duplicate		Manganese	25.6	25.5	mg/L	0.4%	116%
		Zinc	0.266	0.267	mg/L	-0.4%	92%
		pH	7.22	7.20	s.u.	0.3%	
		TSS	1.0	1.0	mg/L	0.0%	
Kellogg Tunnel	06/23/16	Cadmium	0.257	0.255	mg/L	0.8%	
		Lead	0.492	0.490	mg/L	0.4%	
QC Sample		Manganese	36.4	36.2	mg/L	0.6%	
		Zinc	144	152	mg/L	-5.4%	
		pH	2.86	2.86	s.u.	0.0%	
		TSS	23.0	24.0	mg/L	-4.3%	
Performance	06/23/16	Cadmium	0.053	0.050	mg/L	5.4%	
Evaluation		Lead	0.328	0.300	mg/L	8.9%	
Sample		Zinc	0.916	0.730	mg/L	22.6%	
(CTPXX-06-23-16)					mg/L		
RB-06-23-16	06/23/16	Cadmium	0.001	0.001	mg/L	0.0%	98%
		Lead	0.004	0.004	mg/L	0.0%	101%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%	100%
		Zinc	0.049	0.043	mg/L	13.0%	100%
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	06/24/16	Cadmium	0.006	0.006	mg/L	3.3%	102%
		Lead	0.004	0.004	mg/L	0.0%	96%
Lab Duplicate		Manganese	15.0	15.1	mg/L	-0.7%	
		Zinc	0.338	0.345	mg/L	-2.0%	100%
		pH	7.16	7.11	s.u.	0.7%	
		TSS	0.6	0.8	mg/L	-28.6%	
006/CTP Outfall	06/27/16	Cadmium	0.008	0.008	mg/L	0.0%	101%
		Lead	0.004	0.004	mg/L	0.0%	95%
Lab Duplicate		Manganese	18.9	19.1	mg/L	-1.1%	
		Zinc	0.312	0.314	mg/L	-0.6%	95%
		pH	7.21	7.20	s.u.	0.1%	
		TSS	1.0	1.0	mg/L	0.0%	
Kellogg Tunnel	06/27/16	Cadmium	0.112	0.112	mg/L	0.0%	98%
		Lead	0.447	0.447	mg/L	0.0%	93%

SAMPLE LOCATION	DATE	PARAMETER	VALUE RESULTS	QC/dup	UNITS	PRECISION % RPD	MATRIX SPIKE DATA % RECOVERY
Lab Duplicate		Manganese	77.5	77.4	mg/L	0.1%	
		Zinc	54.9	54.6	mg/L	0.5%	
		pH			s.u.		
		TSS			mg/L		
006/CTP Outfall	06/29/16	Cadmium	0.005	0.005	mg/L	0.0%	99%
		Lead	0.004	0.004	mg/L	0.0%	93%
Lab Duplicate		Manganese	23.1	23.0	mg/L	0.4%	
		Zinc	0.287	0.287	mg/L	0.0%	94%
		pH	7.21	7.18	s.u.	0.4%	
		TSS	1.2	1.2	mg/L	0.0%	
Performance	06/30/16	Cadmium	0.051	0.050	mg/L	1.8%	
Evaluation		Lead	0.312	0.300	mg/L	3.9%	
Sample		Zinc	0.853	0.730	mg/L	15.5%	
(CTPXX-06-39-16)					mg/L		
CTPXX-06-30-16	06/30/16	Cadmium	0.051	0.050	mg/L	1.2%	92%
		Lead	0.312	0.307	mg/L	1.6%	90%
Lab Duplicate		Manganese	0.002	0.002	mg/L	0.0%	96%
		Zinc	0.853	0.842	mg/L	1.3%	89%
June 2016, Completeness		Cadmium	30	Valid	Total	30	
		Lead	30	Valid	Total	30	
		Manganese	30	Valid	Total	30	
		Zinc	23	Valid	Total	23	
		pH	17	Valid	Total	17	
		TSS	17	Valid	Total	17	

Monthly Performance Evaluation

Acceptable Quantitation Range

Analyte	**Concentration** (mg/L)	**Acceptable Quantitation Range** (mg/L)
Cadmium	0.050	0.0458-0.0573
Lead	0.300	0.2588-0.3525
Zinc	0.730	0.6296-0.8395

Note: The PE quantitation range (listed above) from our PE sample source is less than required in the contract. The contract limits (listed below) have been utilized for this evaluation.

Note: Performance evaluation samples have been given the designation "CTPXX" for purposes of blind submission to the analytical laboratory.

Analytical Requirements

Quantitation	**Accuracy**	**Completeness**

SAMPLE LOCATION	DATE	PARAMETER	VALUE RESULTS	QC/dup	UNITS	PRECISION % RPD	MATRIX SPIKE DATA % RECOVERY
	Cadmium	≤ 0.025 mg/L		80-120%		90%	
	Lead	≤ 0.15 mg/L		80-120%		90%	
	Manganese	≤ 0.025 mg/L		80-120%		90%	
	Zinc	≤ 0.30 mg/L		80-120%		90%	
	pH	≤ 0.1 pH unit		90-110%		90%	
	TSS	≤ 15 mg/L		75-125%		90%	

Bunker Hill Superfund Site
Kellogg, Idaho
Central Treatment Plant Review
Month: Jun-16

SAMPLE LOCATION	DATE	PARAMETER	CONCENTRATION (mg/L) SPIKE ADDED	DUPLICATE RESULT	SPIKE RESULT	PRECISION % RPD	COMMENTS
006/CTP Outfall	06/01/16	Cadmium	1.00	0.997	0.974	2.3%	
MS/MSD		Lead	1.00	0.922	0.905	1.8%	
		Manganese	1.00	20.7	20.2	2.4%	Sample conc. >> spike level
		Zinc	1.00	1.18	1.16	2.0%	
PTM Discharge	06/02/16	Cadmium	1.00	2.26	2.27	0.6%	
MS/MSD		Lead	1.00	0.969	0.978	0.9%	
		Manganese	1.00	1.65	1.69	2.1%	Sample conc. >> spike level
		Zinc	1.00	12.7	12.7	0.5%	
006/CTP Outfall	06/03/16	Cadmium	1.00	1.03	1.02	0.8%	
MS/MSD		Lead	1.00	0.966	0.954	1.3%	
		Manganese	1.00	16.8	16.9	0.4%	Sample conc. >> spike level
		Zinc	1.00	1.32	1.28	2.5%	
Kellogg Tunnel	06/06/16	Cadmium	1.00	1.15	1.15	0.3%	
MS/MSD		Lead	1.00	1.42	1.42	0.1%	
		Manganese	1.00	77.5	78.4	1.2%	Sample conc. >> spike level
		Zinc	1.00	75.6	76.2	0.9%	
006/CTP Outfall	06/06/16	Cadmium	1.00	0.999	0.996	0.3%	
MS/MSD		Lead	1.00	0.940	0.929	1.2%	
		Manganese	1.00	14.6	14.7	0.5%	Sample conc. >> spike level
		Zinc	1.00	1.28	1.27	1.4%	
006/CTP Outfall	06/08/16	Cadmium	1.00	0.983	1.00	1.7%	
MS/MSD		Lead	1.00	0.939	0.953	1.6%	
		Manganese	1.00	19.6	20.0	2.3%	Sample conc. >> spike level
		Zinc	1.00	1.26	1.28	1.9%	
PE Sample	06/09/16	Cadmium	1.00	0.990	0.968	2.3%	
MS/MSD		Lead	1.00	1.25	1.22	2.5%	
CTPXX-06-09-16		Manganese	1.00	0.987	0.955	3.3%	Sample conc. >> spike level
		Zinc	1.00	1.77	1.75	1.6%	
006/CTP Outfall	06/10/16	Cadmium	1.00	1.02	1.01	0.4%	
MS/MSD		Lead	1.00	0.936	0.929	0.7%	
		Manganese	1.00	21.7	22.0	1.2%	Sample conc. >> spike level
		Zinc	1.00	1.21	1.20	0.7%	
006/CTP Outfall	06/13/16	Cadmium	1.00	0.970	0.973	0.3%	
MS/MSD		Lead	1.00	0.914	0.921	0.8%	
		Manganese	1.00	13.6	13.7	0.7%	Sample conc. >> spike level
		Zinc	1.00	1.14	1.14	0.3%	
Kellogg Tunnel	06/13/16	Cadmium	1.00	1.20	1.22	1.5%	
MS/MSD		Lead	1.00	1.40	1.42	1.1%	
		Manganese	1.00	36.9	36.2	1.8%	Sample conc. >> spike level
		Zinc	1.00	135	153	12.1%	
006/CTP Outfall	06/15/16	Cadmium	1.00	1.00	1.01	0.5%	
MS/MSD		Lead	1.00	0.964	0.968	0.5%	
		Manganese	1.00	12.8	12.7	1.2%	Sample conc. >> spike level

		Zinc	1.00	1.21	1.21	0.2%		
PTM Discharge	06/16/16	Cadmium	1.00	2.30	2.28	0.9%		
MS/MSD		Lead	1.00	0.991	0.987	0.4%		
		Manganese	1.00	1.72	1.69	1.6%	Sample conc. >> spike level	
		Zinc	1.00	12.7	12.5	1.8%		
006/CTP Outfall	06/17/16	Cadmium	1.00	1.04	1.03	1.2%		
MS/MSD		Lead	1.00	0.966	0.955	1.2%		
		Manganese	1.00	14.0	13.9	0.8%	Sample conc. >> spike level	
		Zinc	1.00	1.10	1.09	0.8%		
006/CTP Outfall	06/20/16	Cadmium	1.00	0.994	0.985	0.9%		
MS/MSD		Lead	1.00	0.943	0.934	1.0%		
		Manganese	1.00	24.5	24.2	1.3%	Sample conc. >> spike level	
		Zinc	1.00	1.15	1.13	2.2%		
Kellogg Tunnel	06/20/16	Cadmium	1.00	1.11	1.10	0.5%		
MS/MSD		Lead	1.00	1.40	1.39	0.3%		
		Manganese	1.00	78.1	78.1	0.1%	Sample conc. >> spike level	
		Zinc	1.00	68.9	70.2	1.9%		
006/CTP Outfall	06/22/16	Cadmium	1.00	0.998	0.992	0.5%		
MS/MSD		Lead	1.00	0.960	0.949	1.2%		
		Manganese	1.00	26.5	26.7	1.0%	Sample conc. >> spike level	
		Zinc	1.00	1.18	1.18	0.1%		
RB-06-23-16	06/23/16	Cadmium	1.00	0.980	0.985	0.5%		
MS/MSD		Lead	1.00	0.999	1.01	0.6%		
		Manganese	1.00	1.01	1.00	0.8%	Sample conc. >> spike level	
		Zinc	1.00	1.05	1.05	0.5%		
006/CTP Outfall	06/27/16	Cadmium	1.00	0.999	1.01	1.5%		
MS/MSD		Lead	1.00	0.938	0.953	1.5%		
		Manganese	1.00	20.1	20.3	1.4%	Sample conc. >> spike level	
		Zinc	1.00	1.24	1.26	1.8%		
Kellogg Tunnel	06/27/16	Cadmium	1.00	1.10	1.10	0.1%		
MS/MSD		Lead	1.00	1.38	1.38	0.1%		
		Manganese	1.00	78.3	77.8	0.7%	Sample conc. >> spike level	
		Zinc	1.00	55.3	55.4	0.1%		
006/CTP Outfall	06/29/16	Cadmium	1.00	0.997	0.992	0.6%		
MS/MSD		Lead	1.00	0.930	0.930	0.0%		
		Manganese	1.00	23.6	23.8	1.0%	Sample conc. >> spike level	
		Zinc	1.00	1.22	1.23	0.7%		

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: June 2, 2016 Inspected By: Gary Coast, Steve Brunner'

Item Inspected	Condition	Comments
Channel Sections and Joints	**Good** / Poor	Check for cracks Ok
Channel Inlet Connection @ KT	**Good** / Poor	Check for cracks Ok
Channel Outlet/Pipeline Inlet	**Good** / Poor	Check for cracks Ok
Channel Bottom (during low flows)	**Good** / Poor	Ok
Bottom Joints (during low flows)	**Good** / Poor	Ok
Trash Rack Assembly Rail Units	**Good** / Poor	Check for corrosion and bolt tightness Ok
Trash Racks	**Good** / Poor	Removed debris from trash racks
Parshall Flume	**Good** / Poor	Check fiberglass and joint connections Ok

General Comments:

Bunker mine has no pumps operating at this time.

The Kellogg Tunnel flow at this time is 1.03 mgd (720 gpm), pH at this time is 2.80

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected approximately 15 gallons of sediment from the flume area.

Sediment collected from the flume area was disposed of at the CIA sludge pond.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: June 9, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments	
Channel Sections and Joints	**Good** / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	**Good** / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	**Good** / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	**Good** / Poor		Ok
Bottom Joints (during low flows)	**Good** / Poor		Ok
Trash Rack Assembly Rail Units	**Good** / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	**Good** / Poor	Removed debris from trash racks	
Parshall Flume	**Good** / Poor	Check fiberglass and joint connections	Ok

General Comments:

The Kellogg Tunnel flow at this time is 1.01 mgd (700 gpm), pH at this time is 2.85.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected approximately no sediment from the flume area.

Sediment collected from the flume area was disposed of at the CIA sludge pond.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: June 16, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments	
Channel Sections and Joints	**Good** / Poor	Check for cracks	Ok
Channel Inlet Connection @ KT	**Good** / Poor	Check for cracks	Ok
Channel Outlet/Pipeline Inlet	**Good** / Poor	Check for cracks	Ok
Channel Bottom (during low flows)	**Good** / Poor		Ok
Bottom Joints (during low flows)	**Good** / Poor		Ok
Trash Rack Assembly Rail Units	**Good** / Poor	Check for corrosion and bolt tightness	Ok
Trash Racks	**Good** / Poor	Removed debris from trash racks	
Parshall Flume	**Good** / Poor	Check fiberglass and joint connections	Ok

General Comments:

The Kellogg Tunnel flow at this time is 2.18 mgd (1510 gpm), pH at this time is 3.00.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected approximately 2 gallons of sediment from the flume area.

Sediment collected from the flume area was disposed of at the CIA sludge pond.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: June 23, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments
Channel Sections and Joints	**Good** / Poor	Check for cracks Ok
Channel Inlet Connection @ KT	**Good** / Poor	Check for cracks Ok
Channel Outlet/Pipeline Inlet	**Good** / Poor	Check for cracks Ok
Channel Bottom (during low flows)	**Good** / Poor	Ok
Bottom Joints (during low flows)	**Good** / Poor	Ok
Trash Rack Assembly Rail Units	**Good** / Poor	Check for corrosion and bolt tightness Ok
Trash Racks	**Good** / Poor	Removed debris from trash racks
Parshall Flume	**Good** / Poor	Check fiberglass and joint connections Ok

General Comments:

The Kellogg Tunnel flow at this time is 1.00 mgd (695 gpm), pH at this time is 2.85.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.

CTP Mine Water Line Open Channel Inspection Form

Note: This form should be utilized weekly during the regular channel cleanout.
Results will be include with the Daily Quality Control Report and monthly DMR.

Date: June 30, 2016 Inspected By: Gary Coast, Steve Brunner

Item Inspected	Condition	Comments
Channel Sections and Joints	**Good** / Poor	Check for cracks Ok
Channel Inlet Connection @ KT	**Good** / Poor	Check for cracks Ok
Channel Outlet/Pipeline Inlet	**Good** / Poor	Check for cracks Ok
Channel Bottom (during low flows)	**Good** / Poor	Ok
Bottom Joints (during low flows)	**Good** / Poor	Ok
Trash Rack Assembly Rail Units	**Good** / Poor	Check for corrosion and bolt tightness Ok
Trash Racks	**Good** / Poor	Removed debris from trash racks
Parshall Flume	**Good** / Poor	Check fiberglass and joint connections Ok

General Comments:

The Kellogg Tunnel flow at this time is 1.00 mgd (695 gpm), pH at this time is 2.90.

The concrete flume walls are beginning to deteriorate approximately 6" up from the flume bottom.

The submerged area of the concrete is pitting and is now approximately 1/2" indented.

Alternate hand held staff gauge was used to verify flume staff gauge and flow meter readings.

Ultrasonic flow meter calibration was correct, no adjustments were needed.

Operators collected no sediment from the flume area.

One Government Gulch - PO Box 929 Kellogg ID 83837-0929 (208) 784-1258 Fax (208) 783-0891

Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **01-Jun-16**
Received: **01-Jun-16**
Reported: **02-Jun-16 14:05**

LAB #		WSF0001-01	-	-	-	-	-
SAMPLE ID		006-06-01-16	-	-	-	-	-
		06/01/2016 06:00	-	-	-	-	-
	Reporting Limit						
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0042 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	19.2 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.245	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.17 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-	-

John Kern
Laboratory Director

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **02-Jun-16**
Received: **03-Jun-16**
Reported: **07-Jun-16 12:14**

LAB #			W6F0077-01	W6F0077-02	W6F0077-03	W6F0077-04	-	-
SAMPLE ID			KT-06-02-16	PTM-06-02-16	QC-06-02-16	CTPX6-06-02-16	-	-
	Reporting Limit		06/02/2016 07:30	06/02/2016 08:00	06/02/2016 08:00	06/02/2016 07:00	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.303	1.29	1.28	0.0533	-	-
Lead	0.0500	mg/L	0.541	<0.0036 [5]	0.0073 [3]	0.322	-	-
Manganese	0.0200	mg/L	38.5	-	-	-	-	-
Zinc	0.020	mg/L	139 [1]	11.9 [4]	11.9	0.875	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	2.95 [2]	6.86 [2]	6.90 [2]	-	-	-
Total Susp. Solids	5.0	mg/L	17.0	0.2 [3]	0.6 [3]	-	-	-

Kirby Gray
Technical Director

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Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **03-Jun-16**
Received: **03-Jun-16**
Reported: **06-Jun-16 15:25**

LAB #			W6F0076-01	-	-	-	-	-
SAMPLE ID			006-06-03-16	-	-	-	-	-
	Reporting Limit		06/03/2016 06:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0062 [2]	-	-	-	-	-
Lead	0.0500	mg/L	<0.0036 [3]	-	-	-	-	-
Manganese	0.0200	mg/L	16.0	-	-	-	-	-
Zinc	0.020	mg/L	0.328	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.09 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	0.8 [2]	-	-	-	-	-

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Ferguson Contracting
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Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **06-Jun-16**
Received: **06-Jun-16**
Reported: **07-Jun-16 14:35**

LAB #			W6F0110-01	-	-	-	-	-
SAMPLE ID			006-06-06-16	-	-	-	-	-
	Reporting Limit		06/06/2016 08:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0084 [2]	-	-	-	-	-
Lead	0.0500	mg/L	<0.0036 [4]	-	-	-	-	-
Manganese	0.0200	mg/L	14.1 [3]	-	-	-	-	-
Zinc	0.020	mg/L	0.341	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.19 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	1.2	-	-	-	-	-

Kirby Gray
Technical Director

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Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **06-Jun-16**
Received: **06-Jun-16**
Reported: **07-Jun-16 14:36**

LAB #		W6F0111-01	-	-	-	-	-
SAMPLE ID		KT-06-06-16	-	-	-	-	-
	Reporting Limit	06/06/2016 07:30	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.140	-	-	-	-	-
Lead	0.0500 mg/L	0.475	-	-	-	-	-
Manganese	0.0200 mg/L	78.6 [3]	-	-	-	-	-
Zinc	0.020 mg/L	72.3 [3]	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	3.11 [2]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	103	-	-	-	-	-

Kirby Gray
Technical Director

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Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **08-Jun-16**
Received: **08-Jun-16**
Reported: **09-Jun-16 12:50**

	Reporting Limit							
LAB #			W6F0179-01	-	-	-	-	-
SAMPLE ID			006-06-08-16	-	-	-	-	-
			06/08/2016 06:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0083 [2]	-	-	-	-	-
Lead	0.0500	mg/L	<0.0036 [4]	-	-	-	-	-
Manganese	0.0200	mg/L	18.6 [3]	-	-	-	-	-
Zinc	0.020	mg/L	0.302	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.22 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	1.6	-	-	-	-	-

John Kern
Laboratory Director

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Ferguson Contracting
901 N. Division
Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **10-Jun-16**
Received: **10-Jun-16**
Reported: **13-Jun-16 15:44**

LAB #			W6F0268-01	W6F0268-02	-	-	-	-
SAMPLE ID			006-06-10-16	QC-06-10-16	-	-	-	-
	Reporting Limit		06/10/2016 06:00	06/10/2016 06:00	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0054 [2]	0.0051 [2]	-	-	-	-
Lead	0.0500	mg/L	<0.0036 [3]	<0.0036 [3]	-	-	-	-
Manganese	0.0200	mg/L	20.8	19.8	-	-	-	-
Zinc	0.020	mg/L	0.284	0.279	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.22 [1]	7.24 [1]	-	-	-	-
Total Susp. Solids	5.0	mg/L	1.6	1.6	-	-	-	-

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Pinehurst, ID 83850

Project: **BHCTP**

Sampled: **09-Jun-16**
Received: **10-Jun-16**
Reported: **14-Jun-16 14:38**

LAB #			W6F0269-01	W6F0269-02	-	-	-	-
SAMPLE ID			KT-06-09-16	CTP306-06-09-16	-	-	-	-
	Reporting Limit		06/09/2016 07:30	06/09/2016 07:00	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.282	0.0509	-	-	-	-
Lead	0.0500	mg/L	0.520	0.312	-	-	-	-
Manganese	0.0200	mg/L	37.9	-	-	-	-	-
Zinc	0.020	mg/L	139 [1]	0.853	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	2.85 [2]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	19.0	-	-	-	-	-

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Project: **BHCTP**

Sampled: **13-Jun-16**
Received: **13-Jun-16**
Reported: **14-Jun-16 14:39**

	Reporting Limit							
LAB #			W6F0516-01	-	-	-	-	-
SAMPLE ID			KT-06-13-16	-	-	-	-	-
			06/13/2016 07:30	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.257	-	-	-	-	-
Lead	0.0500	mg/L	0.478	-	-	-	-	-
Manganese	0.0200	mg/L	35.7 [4]	-	-	-	-	-
Zinc	0.020	mg/L	128 [1] [4]	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	2.88 [2]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	19.0	-	-	-	-	-

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Project: **BHCTP**

Sampled: **13-Jun-16**
Received: **13-Jun-16**
Reported: **14-Jun-16 14:37**

LAB #			W6F0515-01	-	-	-	-	-
SAMPLE ID			006-06-13-16	-	-	-	-	-
	Reporting Limit		06/13/2016 06:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0060 [2]	-	-	-	-	-
Lead	0.0500	mg/L	0.0039 [2]	-	-	-	-	-
Manganese	0.0200	mg/L	12.6	-	-	-	-	-
Zinc	0.020	mg/L	0.264	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.16 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	0.8 [2]	-	-	-	-	-

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Project: **BHCTP**

Sampled: **15-Jun-16**
Received: **15-Jun-16**
Reported: **16-Jun-16 12:14**

LAB #			W6F0562-01	-	-	-	-	-
SAMPLE ID			006-06-15-16	-	-	-	-	-
	Reporting Limit		06/15/2016 06:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0058 [2]	-	-	-	-	-
Lead	0.0500	mg/L	<0.0036 [5]	-	-	-	-	-
Manganese	0.0200	mg/L	11.9 [3]	-	-	-	-	-
Zinc	0.020	mg/L	0.282	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.26 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	1.2 [4]	-	-	-	-	-

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Project: **BHCTP**

Sampled: **16-Jun-16**
Received: **17-Jun-16**
Reported: **22-Jun-16 15:37**

LAB #			W6F0442-01	W6F0442-02	W6F0442-03	-	-	-
SAMPLE ID			KT-06-16-16	PTM-06-16-16	CTPXK-06-16-16	-	-	-
	Reporting Limit		06/16/2016 07:30	06/16/2016 08:00	06/16/2016 07:00	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.132	1.32	0.0522	-	-	-
Lead	0.0500	mg/L	0.473	0.0068 [3]	0.321	-	-	-
Manganese	0.0200	mg/L	79.7	-	-	-	-	-
Zinc	0.020	mg/L	101 [1]	11.7 [4]	0.904	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	3.06 [2]	6.74 [2]	-	-	-	-
Total Susp. Solids	5.0	mg/L	109	0.2 [3]	-	-	-	-

Kirby Gray
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Project: **BHCTP**

Sampled: **17-Jun-16**
Received: **17-Jun-16**
Reported: **20-Jun-16 14:40**

LAB #		WGF0441-01	-	-	-	-	-
SAMPLE ID		006-06-17-16	-	-	-	-	-
	Reporting Limit	06/17/2016 06:00	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0028 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	13.1	-	-	-	-	-
Zinc	0.020 mg/L	0.128	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.28 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.6	-	-	-	-	-

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Project: **BHCTP**

Sampled: **20-Jun-16**
Received: **20-Jun-16**
Reported: **21-Jun-16 16:30**

LAB #			W6F0478-01	-	-	-	-	-
SAMPLE ID			006-06-20-16	-	-	-	-	-
	Reporting Limit		06/20/2016 06:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.0066 [2]	-	-	-	-	-
Lead	0.0500	mg/L	<0.0036 [5]	-	-	-	-	-
Manganese	0.0200	mg/L	23.2 [3]	-	-	-	-	-
Zinc	0.020	mg/L	0.236	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	7.18 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	1.0 [4]	-	-	-	-	-

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Project: **BHCTP**

Sampled: **20-Jun-16**
Received: **20-Jun-16**
Reported: **23-Jun-16 10:17**

LAB #			W6F0479-01	-	-	-	-	-
SAMPLE ID			KT-06-20-16	-	-	-	-	-
	Reporting Limit		06/20/2016 07:30	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.120	-	-	-	-	-
Lead	0.0500	mg/L	0.460	-	-	-	-	-
Manganese	0.0200	mg/L	76.5 [3]	-	-	-	-	-
Zinc	0.020	mg/L	65.9 [1] [3]	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	3.13 [2]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	101	-	-	-	-	-

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Project: **BHCTP**

Sampled: **22-Jun-16**
Received: **22-Jun-16**
Reported: **24-Jun-16 09:07**

LAB #		W6F0528-01	-	-	-	-	-
SAMPLE ID		006-06-22-16	-	-	-	-	-
	Reporting Limit	06/22/2016 06:00	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0070 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [3]	-	-	-	-	-
Manganese	0.0200 mg/L	25.6	-	-	-	-	-
Zinc	0.020 mg/L	0.266	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.22 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.0	-	-	-	-	-

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Project: **BHCTP**

Sampled: **23-Jun-16**
Received: **24-Jun-16**
Reported: **28-Jun-16 11:12**

LAB #			W6F0603-01	W6F0603-02	W6F0603-03	W6F0603-04	W6F0603-05	-
SAMPLE ID			KT-06-23-16	QC-06-23-16	RB-06-23-16	TB-06-23-16	CTPXX-06-23-16	-
	Reporting Limit		06/23/2016 07:30	06/23/2016 07:30	06/23/2016 08:00	06/23/2016 08:00	06/23/2016 07:00	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.257	0.255	<0.0009 [4]	<0.0009 [4]	0.0528	-
Lead	0.0500	mg/L	0.492	0.490	<0.0036 [4]	<0.0036 [4]	0.328	-
Manganese	0.0200	mg/L	36.4	36.2	-	-	-	-
Zinc	0.020	mg/L	144 [1]	152 [1]	0.049	<0.003 [4]	0.916	-
Classical Chemistry Parameters (Water)								
pH		pH Units	2.86 [2]	2.86 [2]	-	-	-	-
Total Susp. Solids	5.0	mg/L	23.0	24.0	-	-	-	-

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Project: **BHCTP**

Sampled: **24-Jun-16**
Received: **24-Jun-16**
Reported: **27-Jun-16 16:37**

LAB #		W6F0602-01	-	-	-	-	-
SAMPLE ID		006-06-24-16	-	-	-	-	-
	Reporting Limit	06/24/2016 06:00	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0062 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	15.0 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.338	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.16 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	0.6 [2]	-	-	-	-	-

Kirby Gray
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Project: **BHCTP**

Sampled: **27-Jun-16**
Received: **27-Jun-16**
Reported: **28-Jun-16 11:25**

LAB #		W6F0631-01	-	-	-	-	-
SAMPLE ID		006-06-27-16	-	-	-	-	-
	Reporting Limit	06/27/2016 06:00	-	-	-	-	-
Metals (Total) (Water)							
Cadmium	0.0100 mg/L	0.0078 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	18.9 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.312	-	-	-	-	-
Classical Chemistry Parameters (Water)							
pH	pH Units	7.21 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.0	-	-	-	-	-

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Project: **BHCTP**

Sampled: **27-Jun-16**
Received: **27-Jun-16**
Reported: **30-Jun-16 12:04**

	Reporting Limit							
LAB #			W6F0632-01	-	-	-	-	-
SAMPLE ID			KT-06-27-16	-	-	-	-	-
			06/27/2016 07:30	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.112	-	-	-	-	-
Lead	0.0500	mg/L	0.447	-	-	-	-	-
Manganese	0.0200	mg/L	77.5	-	-	-	-	-
Zinc	0.020	mg/L	54.9	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	3.19 [1]	-	-	-	-	-
Total Susp. Solids	5.0	mg/L	102	-	-	-	-	-

Brandan Borgias
Systems Manager

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Project: **BHCTP**

Sampled: **29-Jun-16**
Received: **29-Jun-16**
Reported: **30-Jun-16 16:10**

LAB #		W6F0673-01	-	-	-	-	-
SAMPLE ID		006-06-29-16	-	-	-	-	-
	Reporting Limit	06/29/2016 06:00	-	-	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100 mg/L	0.0050 [2]	-	-	-	-	-
Lead	0.0500 mg/L	<0.0036 [4]	-	-	-	-	-
Manganese	0.0200 mg/L	23.1 [3]	-	-	-	-	-
Zinc	0.020 mg/L	0.287	-	-	-	-	-
Classical Chemistry Parameters (Water)								
pH	pH Units	7.21 [1]	-	-	-	-	-
Total Susp. Solids	5.0 mg/L	1.2	-	-	-	-	-

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Project: **BHCTP**

Sampled: **30-Jun-16**
Received: **01-Jul-16**
Reported: **11-Jul-16 11:26**

LAB #			W6G0002-01	W6G0002-02	W6G0002-03	-	-	-
SAMPLE ID			KT-06-30-16	PTM-06-30-16	CTPXX-06-30-16	-	-	-
	Reporting Limit		06/30/2016 07:30	06/30/2016 08:00	06/30/2016 07:00	-	-	-
Metals (Total) (Water)								
Cadmium	0.0100	mg/L	0.246	1.36	<0.0009 [5]	-	-	-
Lead	0.0500	mg/L	0.488	0.0056 [3]	<0.0036 [5]	-	-	-
Manganese	0.0200	mg/L	35.7	-	-	-	-	-
Zinc	0.020	mg/L	125 [1]	11.6	<0.008 [5]	-	-	-
Classical Chemistry Parameters (Water)								
pH		pH Units	2.89 [2]	6.87 [2]	-	-	-	-
Total Susp. Solids	5.0	mg/L	25.0	0.2 [3]	-	-	-	-

John Kern
Laboratory Director

Case Narrative
07/06/16 (jk)

Sample 02 contains a green color that is not normally in the sample.